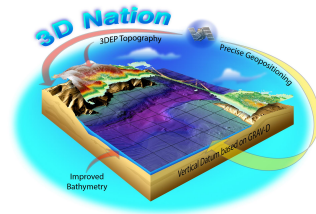# 3D Nation Elevation Requirements and Benefits Study

Changes made to Questionnaire
After March and April Participant Webinars

Mapping a 3D Nation from the tops of the mountains, to the depths of the seas, to include our inland rivers and lakes.

Main Changes

- **Unlimited Mission Critical Activities**

- **Inland Bathy can be submitted without having to answer inland topo questions first**

- **Updates to the benefits questions and example doc**

  - New benefit categories, subcategories, and types

  - New way to ask about monetary benefits

  - Benefits Examples Doc updated to match new questions

Individual Response Format

Change to the number of MCAs an individual can provide

WAS Provide **up to 5** Mission Critical Activities

NOW Provide **unlimited** Mission Critical Activities

Participants can use their unique survey links to enter as many Mission Critical Activities as they need. Participants will need to enter their contact information and whom they are representing each time.

Inland Bathymetry Needs

Change to how an individual can provide Inland Bathy Needs

WAS Pick Inland in Q7 then provide topo needs before being asked if you also have inland bathy needs

NOW Pick Inland Topo and/or Inland Bathy in Q7. No longer need to provide topo needs to also provide inland bathy needs

A participant can now submit only inland bathy needs if that fits his/her MCA requirements.

Inland Bathymetry Needs

Change to Question 7

*Question 7. For your Mission Critical Activity, how would you characterize the area for which you need 3D elevation data?** Each selected choice will take you to a section of the questionnaire where you will be asked to specify a geographic area of interest and provide your requirements for and benefits of enhanced 3D elevation data. Check all that apply. **See FAQ #4**.

NOW

- ❑ **Inland land areas (i.e. inland topography)**
- ❑ **Inland waters (i.e. inland bathymetry)**
- ❑ **Nearshore/Beaches, including Great Lakes (i.e. topobathy and/or nearshore bathymetry)**
- ❑ **Offshore/Outer Continental Shelf/Exclusive Economic Zone, including Great Lakes (i.e. bathymetry)**

WAS

- ❑ Inland, including inland waters (i.e. inland bathymetry)
- ❑ Nearshore/Beaches (including Great Lakes)
- ❑ Offshore/Outer Continental Shelf/Exclusive Economic Zone (EEZ) (including Great Lakes)

Benefits Updates - New Categories

Category & Subcategory Changes

WAS

- Operational Benefits
  - Time or cost savings
  - Mission Compliance
- Customer Service Benefits
  - Products or services
  - Response or timeliness
  - Customer experience
- Societal Benefits (not quantified)
  - Education or outreach
  - Environmental
  - Public safety, including lives and property

NOW

- Operational Benefits
  - Time savings
  - Cost savings or cost reduction
  - Cost avoidance
  - Increased revenues
  - Mission-driven performance improvements
- Customer Service Benefits
  - Value added to products or services
  - Improved response or timeliness
  - Improved customer experience
- Societal Benefits
  - Education or outreach
  - Environmental
  - Public safety, including life and property

Benefits Updates

Benefits Examples Document

- The Benefits Examples Document provides methods for estimating financial and other tangible benefits as well as examples of benefits derived from 3D elevation data

- This document has been updated to align with the new benefits categories.

Benefits Updates

New way to ask about Future benefits

WAS 2 separate questions about future benefits. 1 Qualitative and 1 Quantitative

NOW 1 question using the new categories

A participant can provide qualitative and quantitative future benefits in the same question using the new benefits categories.

Benefits Updates - Future benefits

WAS

Question 23a. What benefits relative to your program would you likely receive from inland 3D topographic data if all of the requirements you provided above could be met for the selected Mission Critical Activity? Check the box that most closely describes the benefits for each benefit type. *

Future benefits from inland 3D topographic data	Major	Moderate	Minor	None	Don't know
Time or cost savings (operational benefits)					
Mission compliance (operational benefits)					
Products or services (customer service benefits)					
Response or timeliness (customer service benefits)					
Customer experience (customer service benefits)					
Education or outreach or public safety (societal benefit)					
Environmental benefits (societal benefits)					
Public safety, including life and property (societal benefits)					
Other (please specify and provide benefits):					

*Question 23b. Briefly describe any major benefits from the prior question. Enter text below.

*Question 23c. What annual dollar benefits would you likely receive from inland 3D topographic data if all of the requirements you provided above could be met for the selected Mission Critical Activity? Please choose from the range of dollar values in the list below. This is one of your most important responses to this survey and will help document the business case for improving topographic and bathymetric data and information. Careful consideration should be given to identifying potential benefits.

□ $0 □ Up to $999 □ $1,000 to $1,999 □ $2,000 to $4,999 □ $5,000 to $9,999 □ $10,000 to $19,999 □ $20,000 to $49,000 □ $50,000 to $99,999 □ $100,000 to $199,999 □ $200,000 to $499,999	□ $200,000 to $499,999 □ $500,000 to $999,999 □ $1,000,000 to $1,999,999 □ $2,000,000 to $4,999,999 □ $5,000,000 to $9,999,999 □ $10,000,000 to $19,999,999 □ $20,000,000 to $49,999,999	□ $50,000,000 to $99,999,999 □ $100,000,000 to $199,999,999 □ $200,000,000 to $499,999,999 □ $500,000,000 to $999,999,999 □ $1 billion or more □ Unknown □ Unable to provide
□ Other (please specify):		

Benefits Updates - Future benefits

Question 23. The following series of tables apply to the FUTURE benefits that your program would gain from inland 3D topographic elevation data if ALL of the requirements you provided above could be met for the selected Mission Critical Activity. The future benefits are broken into three main categories: Operational, Customer Service, and Societal and then into subcategories (e.g. Time savings, Cost Avoidance, etc). Each subcategory contains potential types of benefits. If you have another category and/or type of benefit not provided below, please write in your own response. **See benefits document.**

For each benefit type please indicate the following:

■ **Benefits your program is likely to receive -** Select the option that most closely describes the magnitude of benefits your program is likely to receive for each benefit type on a scale from 'None' to 'Major' 'Don't know' is also an option
■ **Quantification of Benefits -** Please quantify any operational and/or customer service benefits you are likely to receive. Each benefit subcategory has its own quantification metric (e.g. Time Savings is type of hours saved (annual or monthly) and amount of those hours saved (e.g. 80)).
■ **Briefly Describe the Benefit**
   ■ **Briefly describe any major benefits.** A few examples are provided as follows: fewer field visits would be required, or having authoritative data readily downloadable from a single site would save work hours, or we could perform more accurate and efficient modeling, or improved data would improve our ability to protect critical habitat areas.
   ■ **For benefits you quantified, also briefly describe how you quantified the benefit.** For example: fewer field visits would be required, 2 hours/field visit for 200 fewer field visits a year = 400 annual hours saved.

EXAMPLE	Future Operational Benefits from 3D inland topographic data			
Time Savings	**Benefits your program is likely to receive**	**Hours Saved** (Dropdown Menu)	**Amt Saved**	**Please describe briefly:**
Hours saved from faster and/or avoided field visits/inspections.	O Major O Moderate O Minor O None O Don't know	O Annual hours saved O Monthly hours saved O I don't know how to estimate O Unable to provide		

Benefits Updates - Future Benefits

The following slides further describe the benefits categories (Operational, Customer Service, and Societal) and subcategories (e.g. Time savings, Cost Avoidance, etc) and the potential types of benefits available in the Future Benefits Questions

Quantifying Operational Benefits

Methods for Estimating Financial and Other Tangible Benefits

- **Time Savings (hours)**
  - Hours saved from faster and/or avoided field visits/inspections
  - Hours saved through more efficient modeling, reviews, reporting, data dissemination, mapping, or other procedures
  - Hours saved from reduced or avoided data manipulation (e.g., combining data from multiple sources; changing projection, datum, etc.)
  - Hours saved from reduced or avoided data errors
  - Hours saved through in-office project planning or monitoring
  - Hours saved from more streamlined operations (e.g., permitting processes, offshore boundary determinations, etc.)
  - Other

Quantifying Operational Benefits

Methods for Estimating Financial and Other Tangible Benefits

- **Cost Savings or Cost Reduction (dollars)**
  - Data acquisition costs saved, reduced or available to spend on other projects
  - Materials saved (e.g., fertilizer, pesticides, water, irrigation systems, pond design, beach/dune restoration, building/construction materials, etc.)
  - Other

- **Cost Avoidance (dollars)**
  - Data processing avoided (e.g., classifying point clouds, quality control, hydrotreatment, etc.)
  - Data errors avoided
  - Avoided loss of property due to natural hazards or disaster events
  - Avoided accidents caused by human error due to lack of information (e.g. crashes, aviation incidents, marine accidents, oil spills)
  - Other

Quantifying Operational Benefits

Methods for Estimating Financial and Other Tangible Benefits

- **Increased Revenues to the Organization (dollars)**
  - Improved harvest or extraction yields (e.g., timber, agriculture, fisheries, minerals, oil/gas, etc.)
  - Increased cargo carrying capacity
  - New products, services, or applications/apps sold
  - Other

- **Mission-driven Performance Improvements (percent improvement)**
  - Increased program effectiveness
  - Improved ability to carry out mission
  - Improved decision making due to better data, modeling, etc.

Quantifying Customer Service Benefits

Methods for Estimating Financial and Other Tangible Benefits

- Value Added to Products or Services (hours or dollars)
  - New products, services or applications/apps (e.g., solar or green roof potential, GPS navigation, recreation opportunities, etc.)
  - Improved accuracy of products or services (e.g. navigation charts, nautical charts, shoreline delineation, flood hazard maps, flood warnings, etc.)
  - Other

- Improved Customer Experience (hours or dollars)
  - Increased customer confidence in products or services
  - New services, tools, or applications/apps
  - Better data availability (faster downloads, data are all in one place, etc.)
  - Other

Quantifying Customer Service Benefits

Methods for Estimating Financial and Other Tangible Benefits

- Improved Response or Timeliness (hours or dollars)
    - Faster reviews and approvals (e.g., permitting approval, EIS reviews, boundary determinations, etc.)
    - Faster response to an incident or event (e.g., faster access to impacted areas, faster response and recovery operations, improved evacuation plans, etc.)
    - Faster recovery after an event (e.g., faster port reopening after hurricane, faster identification of damaged structures, faster information about Advisory Base Flood Elevations, etc.)
    - Improved customer assistance (e.g., use of data allows virtual view and support via phone, email, chat)
    - More up to date services or products (e.g., nautical charts, navigation charts, flood hazard maps, etc.)
    - Improved projections of at-risk locations and/or faster warning to the public of impending natural or man-made hazards (e.g., flood, fire, tsunami, active shooter, etc.)
    - Other